

Master Thesis Project at Nordic Bioscience: Molecular Pharmacology of the Calcitonin receptor

Introduction:

The calcitonin receptor is a G protein coupled receptor (GPCR), which is activated by its ligand calcitonin. Treatment with calcitonin has shown to improve health of patients with osteoporosis, osteoarthritis and type 2 diabetes. However the role in type 2 diabetes is unknown, why the study of calcitonin receptor regulation is interesting in unraveling the mode of action of calcitonin. The calcitonin receptor is speculated to be regulated by becoming internalized upon activation and ultimately degraded after prolonged stimulation with calcitonin; however, this phenomenon is only poorly understood, and clinical studies of calcitonin have so far not reported receptor desensitization.

Aims:

To investigate the regulation of the calcitonin receptor in response to its potent ligands human calcitonin and salmon calcitonin, with respect to prolonged activation, internalization and desensitization.

To study the ligand binding kinetics in cells and diabetes relevant tissue.

Methods:

Culture of mammalian cell lines, western blotting, histochemistry/cytochemistry, β -arrestin recruitment and localization, cAMP assays, ligand binding

Description of the company:

Nordic Bioscience is an expanding biotech company doing research in several areas: osteoporosis, arthritis, cardio vascular diseases, fibrotic diseases, cancer, Alzheimer's and diabetes. The student will be a part of a very dynamic and young team, with a high publication rate. We offer an attractive research climate with several master and PhD students. In return, a high level of engagement is expected from the student.

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